

REMARKS

Claims 1-13, 15, 17, 18, 20, and 21 were pending in the present application. Claim 9 has been canceled without prejudice or disclaimer herein. Thus claims 1-8, 10-13, 15, 17, 18, 20, and 21 are now pending in the present application. The applicants respectfully request reconsideration and allowance of the present application in view of the above amendments and the following remarks.

The applicants note with appreciation the acknowledgement of the claim for priority under section 119 and the notice that all of the certified copies of the priority documents have been received.

Claims 15, 17, 18, and 20 stand rejected under 35 U.S.C. §112 second paragraph as being allegedly indefinite. Although the basis for the rejection is respectfully questioned in the comments below, the claims have been amended to improve the clarity thereof.

The claims are rejected due primarily to an alleged lack of clarity. A rejection under section 112, second paragraph requires that A) claims set forth subject matter applicants regards as the invention; and B) claims particularly point out and distinctly claim the subject matter of the invention. Since A) relies on subjective interpretation, B) necessarily forms the objective basis for a rejection under this paragraph. Item B) requires an inquiry into the definiteness of the claim, e.g. whether the scope of the claim would be *reasonably* clear to a person of ordinary skill in the art (MPEP 2171).

Applicants submit that since the claims would have been clear to one of ordinary skill in the art as written, and since no evidence has been provided to show otherwise, an objection would have been the proper manner to address issues of mere clarity or form. Since the phrase “the tip portion” would have been clearly understandable to one of ordinary skill as referring to a

tip portion of the center electrode and since there is no possibility of confusions, the rejection is improper under 35 U.S.C. §112 second paragraph.

Without acknowledging the propriety of the rejection, applicants have amended the claims to improve the clarity thereof. Accordingly claims 15, 17, 18, and 20 have been amended as to matters of form only to address the Examiner's concerns relating to clarity and not for reasons related to patentability. Thus the scope of claims 15, 17, 18, and 20 has not been narrowed within the meaning defined in Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., 535 U.S. 722 (2002).

Claims 1, 2, 15, and 16 stand rejected under 35 U.S.C. §102(b) as being allegedly anticipated by Johnson, U.S. Patent No. 5,430,346. Claim 16 was canceled in the previous response, and thus the rejection does not apply to claim 16 and will not be discussed. The rejection is respectfully traversed.

With regard to independent claim 1, the claimed structure results in a decrease in variation in dimension of a spark gap, which eliminates the need for additional adjustment of the spark gap after welding of the ground electrode and increases the productivity of spark plugs. Johnson fails to disclose a structure as claimed, for example in which the ground electrode faces the tip end or the outer peripheral surface of the center electrode and in which the ground electrode is connected to the metal shell by way of a laser fused weld.

As is clearly shown, for example, in Figs. 5 and 8 of Johnson, the ground electrode of Johnson does not face the tip end and the outer periphery of the center electrode. Johnson's spark plug places a C-shaped a ground electrode near the center electrode with the spark gap being defined by an outer edge of the center electrode and an inner edge of a lower end of the C-shaped portion of the ground electrode. It is important to note that an inclination of the C-shaped portion of the ground electrode amounts to a great factor of a variation in dimension of the spark

gap. Specifically, Johnson discloses only spark plugs with structures having such a problem. Johnson further fails to disclose that the ground electrode is connected to the metal shell and instead connects the ground electrode by way of mounting posts connected in turn to a mounting ring to edge 52. John fails to explicitly disclose connecting the ground electrode to a metal shell using a laser fused weld and is silent about the advantage of laser welding, merely listing laser welding as a possible means of attachment of the supporting ring in addition to other welding methods.

Accordingly a *prima facie* case of anticipation has not been established in that the applied reference fails to identically disclose all the features in the manner claimed as required. It is respectfully requested therefore that the rejection of independent claim 1 be reconsidered and withdrawn.

Claims 2 and 15, by virtue of depending from claim 1, are believed allowable for at least the reasons set forth hereinabove with regard to claim 1. It is respectfully requested that the rejection of claims 2 and 15 be reconsidered and withdrawn.

Claims 1 and 6 stand rejected under 35 U.S.C. 103 (a) as being allegedly unpatentable over Pfeil, U.S. Patent No. 2,406,966 in view of Johnson. The rejection is respectfully traversed.

With regard to claim 1, as noted above, the claimed structure results in a decrease in variation in dimension of a spark gap, which eliminates the need for additional adjustment of the spark gap after welding of the ground electrode and increases the productivity of spark plugs. Johnson, and thus the applied art combination, fails to teach or suggest the above structure in which the ground electrode faces the tip end or the outer peripheral surface of the center electrode and in which the ground electrode is connected to a metal shell through laser fusion bonding. The spark plug of Johnson has a C-shaped ground electrode near the center electrode with a spark gap is defined by an outer edge of the tip end of the center electrode and an inner

edge of a lower end of the C-shaped portion of the ground electrode. It is important to note that the inclination of the C-shaped portion of the ground electrode is a great factor of a variation in dimension of the spark gap. Specifically, Johnson discloses only spark plugs whose structure has such a problem. Johnson is silent about the advantage of laser welding and merely lists laser welding in addition to other welding methods. Johnson and thus the applied art combination can be distinguished from the claimed invention in that the ground electrode of Johnson is coupled to a mounting ring through posts. Pfeil fails to teach or suggest any variation in dimension of the spark gap at all and simply teaches connecting an earth electrode directly to a nose 10. Thus one of ordinary skill in the art would not be drawn to Johnson and in any event would not arrive at the claimed invention through the combination of Pfeil and Johnson. The Examiner has further failed to provide evidence of a suggestion or motivation to combine the teachings of Johnson and Pfeil besides the purported advantages drawn from the Examiner's personal knowledge. As noted however, even if the art combination is properly motivated it still fails to teach or suggest all the features of the claimed invention as required.

Accordingly a *prima facie* case of obviousness has not been established in that the applied art combination fails to teach or suggest all the claimed features as required. It is respectfully requested therefore that the rejection of claim 1 be reconsidered and withdrawn.

Claim 6, by virtue of depending from claim 1, is believed allowable for at least the reasons set forth hereinabove with regard to claim 1. It is respectfully requested that the rejection of claim 6 be reconsidered and withdrawn.

Claim 3 stands rejected under 35 U.S.C. 103 (a) as being allegedly unpatentable over Johnson. The rejection is respectfully traversed.

Claim 3, by virtue of depending from claim 1, is believed allowable for at least the reasons set forth hereinabove with regard to claim 1. It is respectfully requested that the rejection of claim 3 be reconsidered and withdrawn.

Claims 4 and 5 stand rejected under 35 U.S.C. 103 (a) as being allegedly unpatentable over Johnson in view of Takafumi et al., JP 63-266046, (hereinafter "Takafumi"). The rejection is respectfully traversed.

Claims 4 and 5, by virtue of depending from claim 1, are believed allowable for at least the reasons set forth hereinabove with regard to claim 1. It is respectfully requested that the rejection of claims 4 and 5 be reconsidered and withdrawn.

Claim 7 stands rejected under 35 U.S.C. 103 (a) as being allegedly unpatentable over Johnson in view of Franks, U.S. Patent No. 3,958,144. The rejection is respectfully traversed.

Claim 7, by virtue of depending from claim 1, is believed allowable for at least the reasons set forth hereinabove with regard to claim 1. It is respectfully requested that the rejection of claim 7 be reconsidered and withdrawn.

Claims 8-10, 13, 18, 20, and 21 stand rejected under 35 U.S.C. 103 (a) as being allegedly unpatentable over Johnson in view of Franks, U.S. Patent No. 3,958,144. Claim 9 is canceled herein and will not be discussed. The rejection is respectfully traversed.

Claims 8, 10, 13, 18, 20, and 21, by virtue of depending from claim 1, are believed allowable for at least the reasons set forth hereinabove with regard to claim 1. It is respectfully requested that the rejection of claims 8, 10, 13, 18, 20, and 21 be reconsidered and withdrawn.

Claims 11 and 12 stand rejected under 35 U.S.C. 103 (a) as being allegedly unpatentable over Johnson in view of Takafumi. The rejection is respectfully traversed.

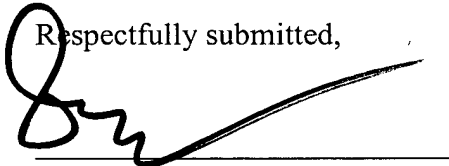
Serial No. 09/988,688

Claims 11 and 12, by virtue of depending from claim 1, are believed allowable for at least the reasons set forth hereinabove with regard to claim 1. It is respectfully requested that the rejection of claims 11 and 12 be reconsidered and withdrawn.

In view of the forgoing, the applicants respectfully submit that this application is in condition for allowance. A timely notice to that effect is respectfully requested. If questions relating to patentability remain, the examiner is invited to contact the undersigned by telephone.

Please charge any unforeseen fees that may be due to Deposit Account No. 50-1147.

Respectfully submitted,


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